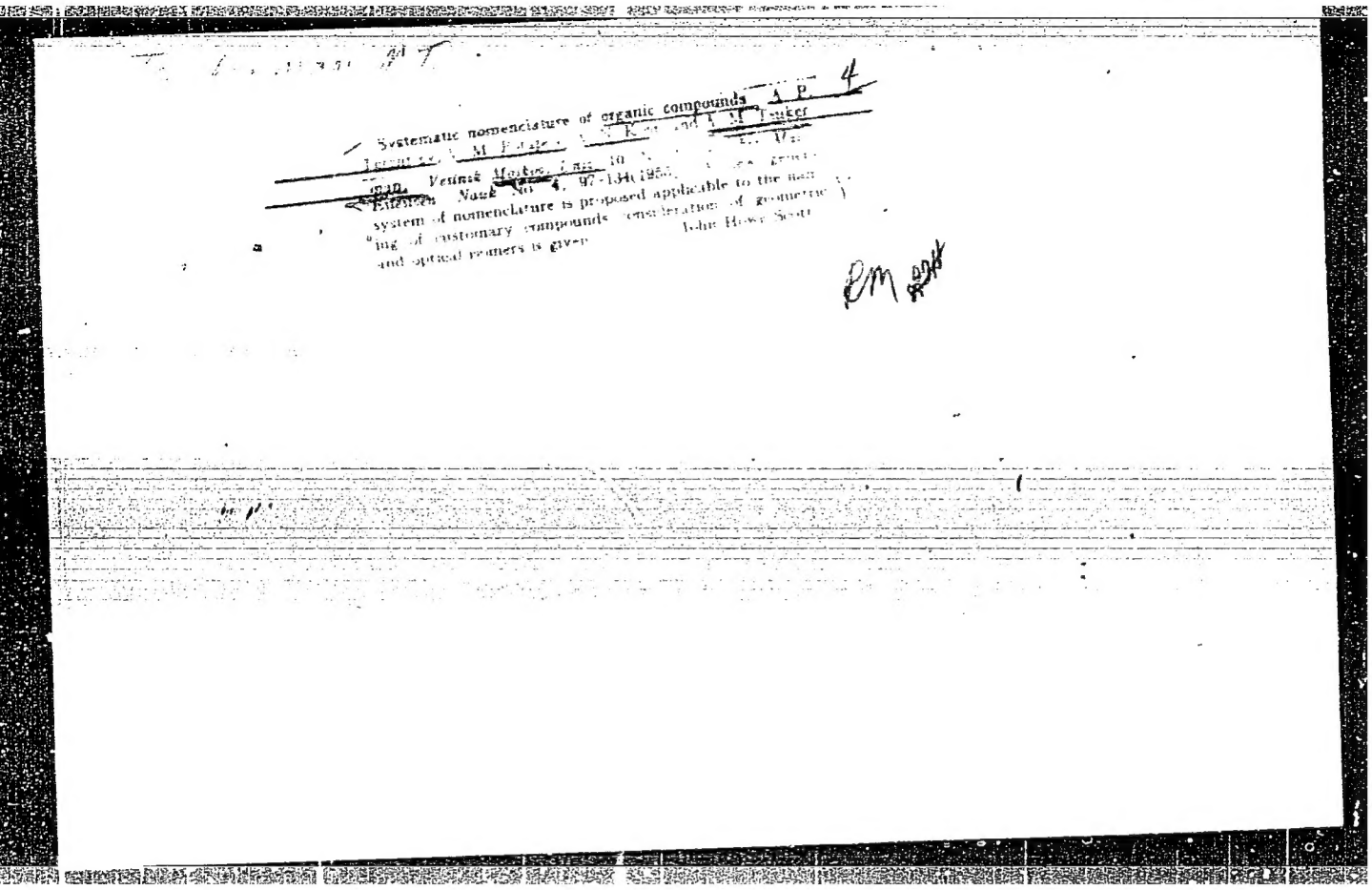

Systematic nomenclature of organic compounds

Vestnik Moskov. Univ., Ser. Mat., Mekh., Astron., Fiz., Khim. 10, No. 4, 97-130(1955).

system of nomenclature is proposed applicable to the nam
ing of customary compounds. Consideration of geometric
and optical isomers is given.

John Howe Scott

TSUKERMAN, N. V.

TSUKERMAN, N. V. "The treatment of fresh wounds and recently healed ulcers with dried tissue preparations", Vrachebn. delo, 1948, No. 12, paragraphs 1049-54.

SO: U-3042, 11 March 53, (Letopis 'nykh Statey, No. 10, 1949).

TSUKERMAN, N. Y., and KLEBANSKIY, A. L.

"Copolymerization of sulfur and chloroprene," a paper presented at the 9th Congress on the Chemistry and Physics of High Polymers, 28 Jan-2 Feb 57, Moscow, Rubber Research Inst.

B-3,084,395

TSUKERMAN, Nikolay Yakovlevich, inzh.; KOMAROVSKIY, M.F., red.; FREGER, D.P., red. izd-va; BELOGUROVA, I.A., tekhn. red.

[Building precast and prestressed reinforced concrete tanks] Opyt stroitel'stva sbornykh i predvaritel'no napriazhennykh zhelezo-betonnykh rezervuarov. Leningrad, 1961. 22 p. (Leningradskii Dom nauchno-tekhnicheskoi propagandy. Obmen peredovym opytom. Seriia: Stroitel'naia promyshlennost', no.2) (MIRA 14:7)
(Tanks) (Reinforced concrete construction)

TSUKERMAN, N.Ya., inzh.

Use of cold asphalt mastic to waterproof reinforced concrete tanks. Mont. i spets. rab. v stroi. 23 no.11:26-27 N '61. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidroliznoy i sul'fitno-spirtovoy promyshlennosti.
(Tanks) (Waterproofing)
(Precast concrete construction)

TSUKERMAN, N.Ya., inzh.

Unit for vibration stamping of the precast reinforced concrete elements for tanks by the vibration rolling method. Stroi. i dor. mash. 7 no.8:28-30 Ag '62. (MIRA 15:9)
(Vibrated concrete)
(Tanks)

KLEBANSKIY, A.L.; TSUKERMAN, N.Ya.; KARTSEV, V.N.; LABUTIN, A.L.; TRENKE, Yu.V.; MAL'SHINA, L.P.; BOROVIKOVA, N.A.; KARELINA, G.G.; ROZHKOV, Yu.P.

Liquid nairit, a new type of chloroprene rubber. Kauch.i rez. 20 no.20:1-5 My '61. (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S.V.Lebedeva.
(Rubber, Synthetic) (Neoprene)

18.8310
15.9202

26988

S/138/61/000/005/001/006
A051/A129

AUTHORS: Klebanskiy, A. L., Tsukerman, N. Ya., Kartsev, V. N., Labutin, A. L., Trenke, Yu. V., Mal'shina, L. P., Borovikova, N. A., Karelina, G. G., Rozhkov, Yu. P.

TITLE: A new type of chloroprene rubber: liquid nairite
(This work was awarded the second prize at the VKhO im. D. I. Mendeleyev competitions in 1959)

PERIODICAL: Kauchuk i rezina, no. 5, 1961, 1 - 5

TEXT: The high chemical stability, the gasoline-petroleum stability and ozone-resistance of chloroprene rubber makes it a suitable material for anti-corrosion coating and hermetic sealing. However, the difficulty of producing highly-concentrated solutions based on commercial nairite limited the application of the latter in anti-corrosion technique. It has been assumed that the use of low-molecular polymers for this purpose would enable one to obtain low-viscose, highly-concentrated solutions satisfying the anti-corrosion techniques. One of the methods for producing low-molecular polymers is the use of the polymerization of increased concentrations of regulator-compounds able to break the chains and to form new ac-

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A new type of chloroprene rubber; liquid nairite

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tive centers. Sulfurous compounds, such as mercaptane, thioacids, xanthogenesulfides, are widely used as regulators. When studying the action of n-tetradecylmercaptane, diisopropylxanthogenedisulfide and bisethylxanthogenedisulfide during the process of polymerization of chloroprene, it was established that with an increase in the concentration of the regulator the molecular weight of the polymer drops correspondingly and the plasticity of the rubber increases. It was assumed that the use of greater quantities of bisethylxanthogenedisulfide in the polymerization of chloroprene in emulsion decreases the molecular weight of the polymer and yields low-viscosity solutions of rubber. An attempt was made to produce low-molecular polychloroprene by polymerization of chloroprene in the presence of sulfur with subsequent destruction of the polymer. It was shown that the action of sulfur differs from that of other regulators. The effect of sulfur on the polymers of chloroprene is shown by the scheme: $\sim(CH_2\text{-}CCl{=}CH\text{-}CH_2)_n\text{-}S_x\text{-}(CH_2\text{-}CCl{=}CH\text{-}CH_2)_m\text{-}S_x$, where $x=2\text{-}6$. The sulfur forms linear bonds in the polymer chain. With an increase in the bound sulfur content in the polymer the molecular weight of the polymer decreases in the subsequent interaction with thiuram from 600,000 to 280,000 with 0.3% of bound sulfur and from 300,000 to 43,000 with 1% of bound sulfur. The quantity of reacted thiuram increases respectively. The destruction scheme is given as follows: 1) The formation of free radicals under the effect of the thermal action or thiuram:

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A new type of chloroprene rubber: liquid nairite A051/A129

$-(CH_2-CCl=CH-CH_2)_n-S-S-S-S-(CH_2-CCl=CH-CH_2)_m-S-S-S-S- \rightarrow -(CH_2-CCl=CH-CH_2)_n-S$;

2) Recombination of the polymer radical with molecular thiuram and splitting off of the latter along the -S-S-bond:

$$-(CH_2-CCl=CH-CH_2)_n-S\cdot + (C_2H_5)_2N-\overset{\overset{S}{\|}}{C}-S-S-\overset{\overset{S}{\|}}{C}-N(C_2H_5)_2 \rightarrow$$

$$\rightarrow -(CH_2-CCl=CH-CH_2)_n-S-S-\overset{\overset{S}{\|}}{C}-N(C_2H_5)_2 + (C_2H_5)_2N-\overset{\overset{S}{\|}}{C}-S\cdot$$

Based on the outlined assumptions of the mechanism of the sulfur action during the process of chloroprene polymerization and destruction of the polymer under the effect of the chemical masticating substances, the conditions for producing low-molecular chloroprene rubber-"liquid" nairite were developed. The liquid types of nairite can be obtained on a typical apparatus. The sulfur can be introduced in the form of solutions in mineral oils as well as aqueous dispersions obtained in the presence of emulsifiers and protective colloids. It was shown by V. N. Kartsev, M. A. Gutman, G. G. Karelina, F. Ye. Berman, Ye. G. Malinovskaya, M. B. Shur at VNIISK, no. 2389, 1951, that for mastication the most effective system is mercapto-

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A new type of chloroprene rubber: liquid nairite

benzothiazol (captax)-diphenylguanidine (DPhG). To increase the activity of these agents, tetramethylthiuramdisulfide was added (thiuram D) or tetraethylthiuramdisulfide (thiuram E). Literature data indicate that active masticating agents of polychloroprene are the piperidine salt of hexamethylenedithiocarbamine acid or ammonium hexamethylenedithiocarbamate. The order of introduction of the agents plays an important role. The effect of the type and composition of the carbon black on the solubility of the rubber mixtures from "liquid" nairite was investigated. Only the thermal carbon black helps to retain complete solubility. Higher indices of relative elongation when filling with 100 w.p. and over are achieved with thermal carbon black. The composition and technology for preparing the rubber mixtures based on the "liquid" nairite with thermal carbon black as filler yielded highly-concentrated solutions (70 - 75%). These solutions are suitable for sealing various equipment by the same methods which are used in the case of dye and varnish coatings. Tests of coatings made of liquid nairite in experimental and natural samples in various industrial fields showed the expediency of using this product as a material for protecting the metal from corrosion, erosion, cavitation and also as a material for hermetic sealing. There are 4 tables and 21 references: 2 Soviet-bloc, 19 non-Soviet-bloc. The references to the 4 most recent

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A new type of chloroprene rubber: liquid nairite

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English-language publications read as follows: Corros. Technol., 5, no. 4, 107 (1958); R. B. Seymour a. oth., Plastics for Corrosion Resistant Application, N.Y., 1955, 90; Rubb. a. Plast. Age, 39, no. 8, 684 (1958); Corros. Technol., 3, no. 3, 89 (1956).

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber im. S. V. Lebedev)

Card 5/6

SOROKIN, P.P., kand. tekhn. nauk; TSUKERMAN, N.Ya., inzh. Prinimal uchastiye PRUDENTOV, A.I., inzh.; KARPOV, V.V., kand. tekhn. nauk, nauchnyy red.; ZHURAVSKIY, N.A., red. izd-va; PUL'KINA, Ye.A., tekhn. red.

[Piling] Svainye raboty. Leningrad, Gos. izd-vo lit-ry po stroit., arkhit. i stroit. materialam, 1961. 213 p. (MIRA 15:3)

(Piling (Civil engineering))

TSUKERMAN, Nikolay Yakovlevich, inzh., nauchn. sotr. ; EYDINOV, Yu.S., inzh., red.

[Using cold asphalt mastic to waterproof reinforced concrete reservoirs] Primenenie kholodnoi asfal'tovoi mastiki dlia gidroizoliatsii zhelezobetonnogo rezervuara; po materialam VNIIGS. Moskva, Gosstroiizdat, 1962. 11 p. (MIRA 17:7)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i sanitarno-tekhnicheskikh rabot (for TSukerman).

TSUKERMAN, N.Ya., inzh.

Study of new types of insulation for reinforced concrete tanks for storing gasoline. Stroi.truboprov. 6 no.10:10-12 O '61. (MIRA 14:10)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i sanitarno-tekhnicheskikh rabot.
(Tanks) (Gasoline--Storage) (Protective coatings)

TSUKERMAN, N.Ya., inzh.

Assembling a precast reinforced concrete tank with a capacity of 100 cubic meters. Mont. i spets. rab. v stroi. 23 no.7:18-20 Jl '61. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i sanitarno-tekhnicheskikh rabot.
(Precast concrete construction)
(Tanks)

27544
S/138/61/000/006/002/006
A051/A129

15.9201

AUTHORS: Labutin, A. L., Klebanskiy, A. L., Tsukerman, N. Ya., Kartsev, V. N., Trenke, Yu. V., Mal'shina, L. P., Borovikova, N. A., Kareline, G. G., Rozhkov, Yu. P.

TITLE: "Liquid nairite" - a new material for rubberizing

PERIODICAL: Kauchuk i rezina, no. 6, 1961, 5 - 8

TEXT: The authors state that in the chemical destruction of "liquid" nairite, highly concentrated solutions can be produced which are applicable as a material for rubberizing. In the USSR a safer binary solvent, consisting of 2 weight parts of ethylacetate and 1 w.p. of gasoline is used in nairite adhesives. Experiments showed, however, that this solvent in "liquid" nairite is not suitable for many technical reasons. Better results were obtained in using a ternary solvent consisting of 76% solvent, 19% turpentine and 5% n-butanol. The latter component does not dissolve the nairite, but facilitates the use of the brush for painting and good coating distribution. It was noted that film vulcanization from liquid nairite at 20°C does not show positive results. Thus various forms of thermal vulcanization were investigated: vulcanization with heated air, live vapor, hot water

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"Liquid nairite" - a new material for rubberizing

and infra-red irradiation. It was established that the most suitable method was vulcanization by hot air. The physico-mechanical indices of nairite coatings vulcanized in air at various temperatures are given in Fig. 1. Fig. 2 shows the relationship between the temperature and duration of the vulcanization. The most suitable temperatures of vulcanization in air are within the range of 100 - 142°C. It was noted that the liquid nairite coatings did not possess the proper adhesion to metal. Thus certain other adhesives or coatings ensuring better adhesion between metal and coating were sought. The best results were obtained with the following three materials: standard leuconate (organic base: n, n', n" - triisocyanate-triphenylmethane), chloronairite adhesive (organic base: chloronairite and nairite) and a primer, tentatively called epoxide primer (organic base: epoxide resin, chloronairite and nairite). The chemical stability and anti-corrosion properties of the vulcanized nairite coatings were studied. The conclusion was drawn that 1.2-mm nairite coatings in combination with a water-resistant coating applied three times can reliably protect metals from corrosion due to aqueous solutions of many acids, alkali and salts. The coatings were not resistant to the action of oxidizing agents, aromatic and halided solvents. Rubber coatings differ from varnish and plastic coatings by an increased resistance to abrasive wear. An attempt was made

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"Liquid nairite" - a new material for rubberizing

to determine the resistance of nairite coatings under conditions of dry friction using the Grosselli-type machine. It is concluded that coatings of so-called crystallizing liquid nairite obtained in low-temperature polymerization are superior to other rubbers in their wear-resistance, excepting vulcollane, which has a unique resistance to abrasive wear. It was established that coatings of liquid oil nairite are superior to coatings of bakelite, polyethylene and caprone, when tested in rapidly flowing sea water. Tests have further shown that liquid nairite as a material for coatings will become widely used in industry in the next few years. At present tests are being conducted in the North Sea and the Atlantic Ocean on propellers of fishing trawlers coated with liquid nairite for protection from corrosion, erosion and cavitation. Mechanical plants are testing steel covers of refrigerators and condensators coated with nairite. These were previously manufactured from non-ferrous metals. Certain chemical plants have installed diaphragm valves, the interior of which is covered with liquid nairite to prevent corrosion from acid solutions, alkali and salts. The possibility of using nairite coatings in various instruments as a means for preventing spark formation in percussion has also been revealed. Finally, it was established that these coatings can be used in certain constructions for hermetic sealing. At the Moscow TETs NO 12 a vacuum-condensator of a mass-produced 50 thousand kw steam turbine withstood a

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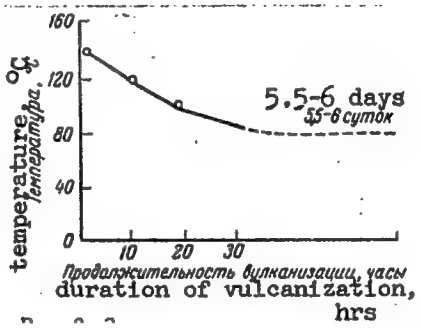
"Liquid nairite" - a new material for rubberizing

testing period of one and a half years with the brass pipes and steel pipe boards coated with liquid nairite. K. S. Shmurey, O. P. Abolina, A. I. Konstantinova and G. A. Selivanovskaya took part in the work. There are 2 tables and 2 sets of graphs.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva (All-Union Scientific Research Institute of Synthetic Rubber im. S. V. Lebedev)

Fig. 2. Dependence of the vulcanization duration of the coatings made of liquid nairite on the temperature



Card 4/6

LABUTIN, A.L.; KLEBANSKIY, A.L.; TSUKERMAN, N. Ya.; KARTSEV, V.N.; TRENKE, Yu.V.; MAL'SHINA, L.P.; BOROVIKOVA, N.A.; KARELINA, G.G.; ROZHKOV, Yu. P.; Prinimali uchastiye: SHMUREY, K.S.; ABOLINA, O.P.; KONSTANTINOVA, A.L.; SELIVANOVSKAYA, G.A.

"Liquid nairit," a new material for rubberizing. Kauch. i rez. 20 no.6:5-8 Je '61. (MIRA 14:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sinteticheskogo kauchuka im. S. V. Lebedeva.
(Neoprene)
(Rubberized fabrics)

KARPOV, V.V., kand.tekhn.nauk; MEYTUS, M.E., kand.tekhn.nauk; TSUKERMAN, N.Ya., inzh.; BELOLIKOV, V.N., inzh., nauchnyy red.; GREYTS, B.V., inzh., nauchnyy red.; KULIKOV, M.G., inzh., nauchnyy red.; FEDORTSOV, B.D., inzh., nauchnyy red.; GRIGOR'YEVA, I.B., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Roofing and waterproofing operations; reference manual] Krovel'nye i gidroizoliatsionnye raboty; spravochnoe posobie. Pod obshchei red. V.V.Karpova. Leningrad, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1961. 302 p. (MIRA 14:6)
(Roofing) (Waterproofing)

TSUKERMAN, N.Ya., inzh.; KREYZMAN, I.N., inzh.

Actual testing of reinforced concrete hipped P-01 slabs for apartment houses of the 1-507-K series. Biul.tekh.inform.po stroi. 5 no.8:23-24 Ag '59. (MIRA 12:11)
(Concrete slabs--Testing)

TSUKERMAN, N.Ya., inzh.

Constructing reinforced concrete cooling-towers. Nov.tekh.mont.i spets.rab.v stroi. 21 no.9:29-32 S '59. (MIRA 12:11)
(Cooling towers) (Precast concrete construction)

TSUKERMAN, N.Ya., inzh.

Designing a precast reinforced concrete cooling tower. Mov.tekh. mont.i spets.rab.v stroi. 21 no.5:18-20 My '59. (MIRA 12:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i sanitarno-tekhnicheskikh rabot Ministerstva stroitel'stva RSFSR.
(Cooling towers) (Precast concrete construction)

BODROV, G.D., kand.tekhn.nauk; TSUKERMAN, N.Ya., inzh.

Prestressed reinforced concrete supports for LEP-35 electric power transmission lines. Biul.tekh.inform. po stroi. 5 no.11:18-19 N '59. (MIRA 13:4)
(Leningrad Province--Electric lines--Poles)

TSUKERMAN, N.Ya.,
KLEBANSKII, A.L., ZhOKh 16, 2083-98 (1946)

TSUKERMAN, N.Ya., inzh.

Construction of precast prestressed reinforced concrete tanks.
Mont.i spets.rab.v stroi. 22 no.10:29-32 O '60. (MIRA 13:9)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut gidrotekhnicheskikh i sanitarno-tekhnicheskikh rabot.
(Tanks) (Precast concrete construction)

TSUKERMAN, O.A., TROITSKAYA, I.S.

Case of movable liver, interposition of the small intestine, and anomalous development of the intestines of the type mesenterium ileo-colicum commune. Vest.rent. i rad. 34 no.3:65-67 My-Je '59. (MIRA 12:10)

1. Iz TSentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (dir. - deystvitel'nyy chlen AMN SSSR prof. A.A.Bagdasarov).

(INTESTINES, abnorm.
malform. & interposition of small intestine, with movable liver (Rus))

(LIVER, abnorm.
movable liver, with malform. of intestines & interposition of small intestine (Rus))

DANILOVA, L.A.; TSUKERMAN, O.A.; BARAKOV, V.V.

Case of chronic lymphadenosis with massive leukemic lesions of the lung tissue and formation of cavities. Probl.gemat.i perel.krovi 4 no.12:47-50 D '59. (MIRA 13:4)

1. Iz TSentral'nogo ordena Lenina instituta gematologii i pereliva-niya krovi (direktor - deystvitel'nyy chlen AMN SSSR prof. A.A. Bagdasarov) Ministerstva zdravookhraneniya SSSR.
(LEUKEMIA LYMPHOCYTIC pathol.)
(LUNGS pathol.)

TSUKERMAN, O.A.

Roentgenological picture of changes in the lungs, pleura and thoracic lymph nodes in chronic forms of leukemia. Problemy gemat. i perel. krovi 8 no.8:13-17 Ag '63. (MIRA 17:8)

1. Iz rentgenologicheskogo otdeleniya (zav. - doktor med. nauk I.B. Gurevich) TSentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (dir. - dotsent A.Ye. Kiselev) Ministerstva zdravookhraneniya SSSR.

TSUKERMAN, O.A.

Problem of specific leukemic changes in the lungs in acute leukemia. Probl. gemat. i perel. krovi 3 no.6:16-20 N-D '58. (MIRA 12:7)

1. Iz Tsentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (dir. - deystvitel'nyy chlen AMN SSSR prof. A.A. Bagdasarov) Ministerstva zdravookhraneniya SSSR.
(LUNGS--DISEASES) (LEUKEMIA)

TSUKERMAN, O.A.

Roentgenological picture of leukemic changes in the lungs, pleura and thoracic lymph nodes in acute (subacute) leukemia. Vest. rent. i rad. 38 no.5:26-30 S-O'63 (MIRA 16:12)

1. Iz rentgenovskogo otdeleniya (zav. - doktor med. nauk I.B.Gurevich) TSentral'nogo ordena Lenina instituta gematologii i perelivaniya krovi (dir. - dotsent A. Ye. Kiselev).

TSUKERMAN, P. V.

KOFMAN, R.D., inzhener; FARBER, B.D., inzhener; TSUKERMAN, P.V., inzhener.

The K2K-20/3g two cantilever gantry crane. Elek.sta. 28 no.3:72-74 Mr '57. (MLRA 10:5)

(Cranes, Derricks, etc.)

TSUKERMAN, P.V.

104-3-26/45

AUTHOR: Kofman, R.D., Farber, B.D. and Tsukerman, P.V., Engineers.

TITLE: Trestle-type double cantilever crane type K2K-20/3g (Kozlovyy dvukhkonsol'nyy kran K2K-20/3g)

PERIODICAL: "Elektricheskiy Stantsii" (Power Stations), 1957, Vol. 28, No.3, pp. 72 - 74 (U.S.S.R.)

ABSTRACT: Most structural and erection areas of power stations are provided with travelling bridge cranes for loading and unloading work and for assembly of parts of the boilers. Cranes type K 202 that have been used in the past have a span of 20 m and can lift 20 tons and the span can be increased to 26 and 32 m if the load is reduced to 15 and 12 tons, respectively. Additional parts have been designed for this crane so that it can lift the full 20 tons over a span of 32 m - however, all these types of crane can only serve a narrow area. Therefore, a new type of crane has been designed which can use either a 20 ton hook or a 3 m³ grab. The span between supports is 32 m and the total travel of the trolley is 49 m wide. If railway and crane tracks are subtracted the useful span is 42 m. This great width makes it possible greatly to shorten the length of the assembly area and of associated railway tracks, which can be very important. Directions are given

Card 1/2

TSU[illegible] M.M., . V.

Kutakekadze, S. O. and Tsukerman, R. V. "Russian Scientists - the initators of the mechanical theory of heat," (M. V. Lomonosov, I. I. Polzunov and others)," Kotloturbostroyeniye, 1948, No. 6, p. 1-4

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

TSUKERMAN, R. V. and KUTATELADZE, S. S.

"An Outline of the Developement of the Theory of Heat in the Work of Russian Scientists of the 18th and 19th centuries" (Ocherk razvitiya teorii teploty v rabotakh russkikh uchenykh XVIII i XIX stoletiy), Gosenergoizdat, Moscow-Leningrad 1949, 156 pp, 9 rubles.

TSVETKOV, L.A., zasluzhennyy uchitel' shkoly RSFSR

Teaching organic chemistry in the 11th grade by using the new textbook. Khim. v shkole 18 no.4:19-31 Jl-Ag '63.
(MIRA 17:1)

TOKAREV, V.V.; TSVETKOV, V.I. (Moskva)

Optimum for of gamma radiation shielding. PMTF no.1:90-94 Ja-F '64. (MIRA 17:4)

TSVETKOV, Vasiliy Ivanovich; KORNILOVA, M.I., red.

[How we conduct educational work] Kak u nas vedetsia vospitatel'naia rabota; zapiski predsedatelia zavkoma. Moskva, Profizdat, 1964. 92 p. (Bibliotechka profsoiuznogo aktivista, no.11(83)) (MIRA 17:6)

ISUKELIAN, R. V. and KUTATELADZE, S. S.

"Russkiye uchenyye osnovopolozhniki mekhanicheskoy teorii teploty" (Russian Scientists are the Founders of the Mechanical Theory of Heat), Kotloturboostroyeniye, 1949, No. 6, pp. 1-4.

TSUKERMAN, R. V.

"Sources of present day steam engineering (for the 200th anniversary of the birth of Ivan Ivanovich Polzunov)", Prioroda, No. 8, 1949

TSUKERMAN, R. V.

27713. TSUKERMAN, R. V. --U istokov sovremennoy parotekhniki (K220-letiyu so dnya rozhdeniya i, i. polzunova). Priroda, 1949, No. 8, S. 77-99

So: Letopis' Zhurnal'nykh Statey, Vol 37, 1949

TSUKERMAN, R. V., jt. au.

Survey of the work of Russian scientists and engineers in the field of boiler technology.

Leningrad, Gos. energ. izd-vo, 1951.

226 p. (52-44644)

TJ285.K88

TSUKERMAN, R. V.

Ventilation.

First axial ventilator. Vest. mash. 32, No. 2, 1952.

9. Monthly List of Russian Accessions, Library of Congress, October 1953, Uncl.

KUTATELADZE, S. S., TSUKERMAN, R. V.

Heat.

Contribution of Russian scientists to the study of heat. Fiz. v shkole no. 5, 1952.

9. Monthly List of Russian Accessions, Library of Congress, December 1958, Uncl.

1. TSUKERMAN, R.
2. USSR (600)
4. SteamTurbines
7. From the history of the steam turbine in Russia, Mor. flot, 13, No. 4, 1953.

9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

TSUKERMAN, R. V.

USSR/Miscellaneous

Card 1/1

Author : Tsukerman, R. V., Cand. in Tech. Science

Title : From the history of the development of steam engines in Russia

Periodical : Vest. Mah. 34/3, 85-88, Mar/1954

Abstract : Right from the beginning of the manufacture of reciprocating steam engines, the idea for the construction of an engine with a direct rotational movement originated. In such engines, as were first invented, the power was obtained not as in the turbine but on the same principle as in the reciprocating engine. Many patents were taken out on this principle in the 19th and 20th centuries, but such engines never attained great application. In 1829 Smirnov took out a patent. In 1882 Tverskoy and Veiner took out patents. Illustrated explanations of the working of these machines are given. A later more efficient engine was patented by Maevskiy. The history of invention is useful in avoiding a repetition of the methods that have proved inadequate. Drawings.

Institution : .....

Submitted : .....

GEL'TMAN, A.E., kandidat tekhnicheskikh nauk; KANAYEV, A.A., kandidat tekhnicheskikh nauk; TSUKERMAN, R.V., kandidat tekhnicheskikh nauk.

Problems in the development of Soviet heat power engineering. Energomashinostroenie no.3:1-6 D '55. (MLRA 9:5)
(Power engineering)

TSUKERMAN, R.V.

GEL'TMAN, A.E.; kandidat tekhnicheskikh nauk; KANAYEV, A.A., kandidat tekhnicheskikh nauk; TSUKERMAN, R.V., kandidat tekhnicheskikh nauk.

Tasks for technical progress in boiler and turbine manufacturing. Energomashinostroenie no.12:1-5 D '56. (MLRA 10:1)
(Steam turbines) (Boilers)

637

AUTHOR: Geltman, A.E., Candidate of Technical Sciences and Tsukerman, R.V., Candidate of Technical Sciences (Central Boiler Turbine Institute).

TITLE: On the design of new thermal power equipment. (K proyektirovaniyu novogo teploenergooborudovaniya.)

PERIODICAL: "Teploenergetika" (Thermal Power), 1957, Vol. 4, No. 6, pp. 3 - 6 (U.S.S.R.)

ABSTRACT: A recent article by M.A. Styrikovich (Teploenergetika 1957 No. 5, pp. 3 - 6) considered the future changes in the fuel balance of the Soviet Union and the tendencies in power engineering arising therefrom. The present article gives further considerations about the selection of future types of power equipment based on work carried out in the Central Boiler and Turbine Institute (see 'Energomashinostroenie' 1955 No. 3 and No. 12, 1956). Until recently, it was of prime importance in Soviet power engineering to achieve the maximum standardisation of equipment. This ensured rapid growth of output but led to some loss of economy and occasional operational inadequacies. At the present time in designing new types of power equipment serious attention is devoted to reducing the specific heat consumption which is mainly achieved by increasing the initial steam conditions making the thermal circuit more complicated and by the use of deeper vacuum. This naturally increases the cost and complication

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On the design of new thermal power equipment. (Cont.)

of the equipment.

Present plans for very extensive development of power engineering, including a number of new industrial districts in Siberia, is creating a greater variety of operating conditions for power equipment. There will be a great variety of fuel supply conditions and load curves on power stations in different power systems and also differences in water supply conditions. Up till now the actual conditions of operation of equipment in future power systems in different districts of the country have not been sufficiently studied.

It is now possible to increase considerably the number of types and sizes of boiler and turbine equipment and standardisation will be directed not so much to complete sets as to particular items and assemblies of equipment.

Consideration is then given to conditions of operation of thermal power stations in future systems. In the European part of the Soviet Union, fuel costs are relatively high. Fuel costs are much less in Siberia where the Kuznetsk, Karaganda and Kansk coals, which together make up 22% of all power fuel, cost together with transport 70 to 80 Roubles per ton of "conventional" (7 000 kcal) fuel as against 100 to 150 in the European part of the Soviet Union. In addition, in a number of Eastern districts the use of opencast working is extending, giving fuel costs of 20 to 30 Roubles per ton and less at the source. In future the proportion of expensive fuel will diminish, and that of cheap coals will increase.

On the design of new thermal power equipment. (Cont.)

The shape of the load curve is determined by the type of consumer. Districts having industries that consume a great deal of power have a smooth curve, for instance, in the Urals and South and a number of Eastern regions. Although there will be some increase in communal and domestic power consumptions of these systems in 1965 to 1970 the daily load factor will be about 0.9 and the number of hours of utilisation of maximum load about 7 000 hours per year. In regions with relatively expensive fuel where it is not advantageous to develop industry consuming large amounts of electric power the communal and domestic loads are relatively more important. The power system of the Centre and North West are typical in this respect where for the period 1965 - 1970 the daily load factor will be of the order of 0.80 to 0.85 and the maximum load will be used for about 5 700 hours per year.

The presence of other types of power station in a system affects the extent to which thermal stations meet the total load curve. Hydro stations affect the amount of reserve plant required in thermal stations because their installed power is based on conditions in dry years. During periods of high water power stations should cover the base load and thermal stations the peak. During the winter, when little water is available, water power stations should carry the peak load and thermal

On the design of new thermal power equipment. (Cont.)

stations the base load. During a large part of the year, the load on heat and electric power stations is governed by heat requirements. Therefore, in winter, variations in electrical load should mainly be taken up by condensing stations.

In the future an ever increasing number of condensing power stations will by built with super-high and super-critical steam conditions. Because of the high capital investment in such stations and also because of the sensitivity of austenitic steels to temperature changes these power stations should carry the base load. Atomic power stations should also have a smooth load curve. Therefore, the conditions of operation of other thermal power stations will deteriorate.

The varied climatic conditions in the Soviet Union and special features of power station sites will involve a wide range of cooling water temperature. Mean annual water cooling temperatures for different regions of the Soviet Union with different systems of water supply are tabulated. They range from 7.1 °C for run of the river schemes in Sverdlovsk to 22.5 °C for cooling towers in Baku. Consequently the mean annual pressure in condensers will cover the wide range of 0.025 to 0.07 atm.

The selection of parameters and characteristics of turbine and boiler sets for large condensing stations is then considered. At the present time it is planned to manufacture new power equipment for two ranges of steam conditions: up to 130 atm. at 565 °C using mainly pearlitic steels and 220 to 300 atm. at

On the design of new thermal power equipment. (Cont.)

600 to 650 °C with comparatively extensive use of austenitic steels. The stations with the lower conditions will be comparatively cheap and flexible. Those with higher conditions are more efficient, more expensive and more sensitive to changes in working conditions. The need in a number of regions for thermal stations to work on a varying load will have a great influence on the selection of steam conditions and energy characteristics of turbines and boilers. In the Centre and North West, where loads will be variable, the use of sub-critical and super-critical steam pressure is not specially advantageous. If the base load is allotted to these 'critical pressure' stations the operating conditions of the other stations with high steam conditions is impaired. It follows that even in regions with expensive fuel the scope for base load power stations which are not adaptable to a variable load curve may be limited. As has already been shown, in regions with cheap fuel it is above all necessary to reduce initial outlay.

It follows that a most important and immediate task is further perfection of power equipment based on pearlitic steels using the highest possible steam conditions that these steels permit. The power of units with these steam conditions should be of the order of 200 to 300 MW. It follows that where

On the design of new thermal power equipment. (Cont.)

austenitic steels are used in power stations there must be a considerable increase in efficiency in order to justify the initial outlay and the enforced limitations on working conditions. The question of the rational scope and scale of application of power stations with steam conditions that necessitate extensive use of austenitic steels requires detailed study.

In view of the wide range of cooling water conditions the use of a single standard vacuum leads to considerable losses. Approximate technical and economic calculations show that increase in the dimensions of the low pressure section of turbines, with reduction of the specific steam load of the annular area of the last stage from 33 to 22 kg/m^{2}sec, can be justified (with an average fuel cost of the order of 100 Roubles per ton of "conventional" fuel) only with cooling water temperatures of the order of 10 to 15 °C and less.

Where the average temperature is higher such a development of the low pressure section, which also necessitates corresponding increase in condensing facilities, is not economic. It is obvious that the variety of conditions of water and fuel supply that exist cannot be taken care of economically by a single series of turbines with standard vacuum for all conditions. It is also inadvisable to design for one constant temperature of gases leaving the furnace whatever the fuel cost. The present standard temperature of 120 °C, recommended when fuel is dry, is apparently near to the optimum value for

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On the design of new thermal power equipment. (Cont.)

the mean cost of fuel. However, this temperature is affected by the cost of the fuel and if, for example, the cost of a ton of conventional fuel is 120 Roubles the optimum temperature difference on the hot end of the air heater is about 30 to 40 °C whilst if the cost of a ton of conventional fuel is 60 Roubles, this temperature difference should increase to 60 to 80 °C, i.e. the temperature of the gases leaving the furnace should be raised by 30 to 40 °C. Therefore, in Siberia where fuel is cheap it may be advisable appreciably to raise the temperature of the outgoing gases to economise in metal in the end heating surfaces and to reduce the house service power consumption.

It will be necessary to alter the present practice in designing boilers and turbines of making the main design condition, that corresponds to guaranteed efficiency figures, coincide with the rated power. In a number of future power stations rated output will be used for only 5 700 hours per year. With allowance for spinning reserve in the system and periodic load reduction, the long term load on sets in such power systems may be much less than the rated value. The economic operating conditions of turbo sets intended for such conditions of operation should therefore coincide with the value of mean load that is used for the longest time.

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On the design of new thermal power equipment. (Cont.)

Similarly, boiler equipment should be designed so that the maximum efficiency coincides with economic operating conditions of the turbine.

The main conclusion from all this is that in the new stage of development of thermal engineering the necessary variety of requirements cannot be satisfied by single standard identical types of power equipment . It will be necessary to design the equipment in respect of steam conditions and main characteristics to suit the particular conditions of operation that are encountered.

No figures, 2 literature references (Russian).

Card 8/8

GEL'TMAN, A.E., kand.tekhn.nauk; KANAYEV, A.A., kand.tekhn.nauk; TSUKERMAN, R.V., kand.tekhn.nauk; BULANIN, V.I., kand.tekhn.nauk, nauchnyy red.; VLADIMIRSKIY, D.M., red.izd-va; GUKHZHIYEVA, A.M., tekhn.red.

[Heat-power machinery manufacture in the sixth five-year plan] Teploenergomashinostroenie v shestoi piatiletke. Leningrad, Obshchestvo po rasprostraneniiu polit.i nauchn.znanii RSFSR, Leningr.otd-nie, 1958. 29 p. (MIRA 12:3)
(Turbines) (Boilers)

TSUKERMAN, R. V.

25(2) PHASE I BOOK EXPLOITATION SOV/2179

Gel'tman, Aleksey Eduardovich, Candidate of Technical Sciences, Andrey Andreyevich Kanayev, Candidate of Technical Sciences, and Rudol'f Vul'fovich Tsukerman, Candidate of Technical Sciences

Teploenergomashinostroyeniye v shestoy pyatiletke (Heat Power Machinery Manufacture in the Sixth Five Year Plan) Leningrad, 1958. 49 p. Errata slip inserted.. 9,000 copies printed.

Sponsoring Agency: Obshchestvo po rasprostraneniyu politicheskikh i nauchnykh znaniy RSFSR, Leningradskoye Otdeleniye.

Scientific Ed.: V.I. Bulanin, Candidate of Technical Sciences; Ed. of Publishing House: D.M. Vladimirskiy; Tech. Ed.: A.M. Gurdzhiyeva.

PURPOSE: This pamphlet is intended for the general reader.

COVERAGE: The authors discuss the important role of the machin-

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Heat Power Machinery (Cont.)

building industry in providing power stations with power-generating machinery, in order to fulfill the Sixth Five Year Plan in accordance with directives of the Twentieth Congress of the Communist Party of the Soviet Union. They also comment, in general terms, on the capacity of Soviet electric power stations, power-generating systems, and describe steam turbines, boiler installations, auxiliary equipment, and equipment for small electric power stations. No personalities are mentioned. There are no references.

AVAILABLE: Library of Congress (TJ 255.G4)

TABLE OF CONTENTS: None given. The book is divided as follows:

Card 2/3

GEL'TMAN, A.E., kand. tekhn. nauk; TSUKERMAN, R.V., kand. tekhn. nauk.

"Statistics in industrial power engineering" by A.A. Rodshtein. Reviewed by A.E. Gel'tman, TSukerman. Teploenergetika 5 no.4:95-96 Ap '58. (MIRA 11:5)

(Power engineering)
(Rodshtein, A.A.)

GEL'TMAN, A.E., kand. tekhn. nauk; TSUKERMAN, B.V., kand. tekhn. nauk; SHLYAKHOVA, G.V., kand. tekhn. nauk; BUDNYATSKIY, D.M., inzh.

Selecting a rational vacuum for high-capacity condensation turbines. Elek. sta. 30 no.3:40-45 Mr '59. (MIRA 12:5)
(Steam turbines)

TSUKERMAN, R.V., kand. tekhn. nauk; BULANOV, N.G., kand. ekon. nauk; SHIFRIN, I.B., inzh.; BRIL', A.R., inzh.; NAZARENKO, S.S., inzh.; BIZINA, N.S., inzh.

Auxiliary equipment of steam turbine electric power plants. Energomashinostroenie 11 no.9:40-42 S '65. (MIRA 18:10)

TSUKERMAN, R.V., kand. tekhn. nauk; DOYNIKOVA, Ya.P., kand. tekhn. nauk; ABASHKINA, O.I., inzh.

Effect of cost indices on the choice of the parameters and unit power ratings in power installations. Energomashinostroenie 10 no.11:29-33 N '64 (MIRA 18:2)

TSUKERMAN, R.V., kand.tekhn.nauk; NIKONOV, A.P., kand.tekhn.nauk; BYKOV, V.M., kand.tekhn.nauk

Operational reliability of high-pressure boiler and turbine equipment. Energomashinostroenie 9 no.6:27-30 Je '63. (MIRA 16:9)

BULANOV, N.G.; KUPRIYANOVA, L.V.; TSUKERMAN, R.V.; BUDNYATSKIY, D.M.; GEL'TMAN, A.E.; KOSTOVETSKIY, D.L.; PISKAREV, A.A.; TARANIN, A.I.; KORNEYEV, M.I.; MOISEYEV, G.I.; KENDYS, P.N.; KIRPICHEV, Ye.F., RUBIN, M.M.; SOKOLOV, N.V.; SHCHERBAKOV, V.A.; KOVALEV, N.N.; BELOV, A.A.; SEREBRYAKOV, G.M.; SATANOVSKIY, A.Ye., red.; RODDATIS, K.F., red.; KORKHOVA, V.I., red.; CHEREPENNIKOV, B.A., red.; KOGAN, F.L., tekhn. red.

[Manufacture of power machinery abroad] Energeticheskoe mashinostroenie za rubezhom. Moskva, 1961. 583 p. (MIRA 16:8)

1. Moscow. TSentral'nyy institut nauchno-tekhnicheskoy informatsii mashinostroyeniya.

(Electric power plants--Equipment and supplies)

TSUKERMAN, R.V., kand.tekhn.nauk; NAZARENKO, S.S., inzh.

Cost indices of high-capacity steam boiler manufacture.
Energomashinostroenie 7 no.10:33-36 O '61. (MIRA 14:10)
(Boiler-making industry)

TSUKERMAN, R.V., kand.tekhn.nauk; NIKONOV, A.P., kand.tekhn.nauk; BYKOV, V.N., kand.tekhn.nauk

Use of the boiler-turbine equipment at electric power plants with high parameters. Elek. sta. 32 no. 5:7-12 My '61. (MIRA 14:5)
(Steam power plants)

25(1) PHASE I BOOK EXPLOITATION SOV/1221

Tsukerman, Samariy Aronovich

Poroshkovaya metallurgiya (Powder Metallurgy) Moscow, Izd-vo AN SSSR, 1958. 158 p. (Series: Akademiya nauk SSSR. Nauchno-populyarnaya seriya) 7,000 copies printed.

Ed.: Bal'shin, M.Yu; Ed. of Publishing House: Silayev, A.F.; Tech. Ed.: Guseva, A.P.

PURPOSE: This book is intended for laymen interested in industry and science, but may also be useful to metallurgists and metallurgical engineers.

COVERAGE: The author traces the development of powder metallurgy, describing the technology, properties, and application of compacted metal powders and articles fabricated from them. He also discusses the economics and future growth of powder metallurgy. No personalities are mentioned. There are 47 references, of which 42 are Soviet, 3 English, and 2 German.

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TABLE OF CONTENTS:

AVAILABLE: Library of Congress

Card 4/4

GO/mas
3-3-59

AUTHOR: Teukerman, S. A.; Kvin, V. Ye.

Card 1/3

TSUKERMAN, S.A.; DUBROVSKIY, A.P.

Graphite press molds for manufacturing specimens of high-melting compounds. Zav.lab. 25 no.2:242-243 '59. (MIRA 12:3)

1. Institut metallurgii imeni A.A. Baykova AN SSSR.
(Molding (Founding))

18(5)

AUTHORS: Tsukerman, S. A., Dubrovskiy, A. P. SOV/32-25-2-64/78

TITLE: Graphite Molds for the Production of Samples of Refractory Compounds (Grafitovyye pressformy dlya polucheniya obraztsov tugoplavkikh soyedineniy)

PERIODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 2, pp 242-243 (USSR)

ABSTRACT: The heavily strained parts of molds used at high pressing temperatures (2500°) have to consist of compact, densely packed graphite. The graphites ARV and A (according to the nomenclature of the Moskovskiy elektrodniy zavod (Moscow Electrode Plant)) are highly suitable for this purpose, since the type ARV has a compression strength of at least 250 kg/squ. cm, and the A type a compression strength of at least 350 kg/squ. cm. Moreover, a mold for pressing cylindrical samples (Fig) is described, having, as a special feature, an interlayer below the piston as well as the thin-walled cylinder which represents the mold proper. For prism-shaped samples another mold without interlayers is used. Molds of the described design have been used for manufacturing cylindrical samples with diameters ranging from 7 to 30 mm, and heights

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between 5 and 20 mm, as well as prism-shaped samples of the dimensions 5 by 5 by 40 mm. The temperatures during the pressing operation ranged from 2500 to 2600°, the specific pressure was 300-400 kg/squ. cm. There is 1 figure.

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR (Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences, USSR)

DUBROVSKIY, Artem Petrovich, inzh.; TSUKERMAN, Samariyn Aronovich, kand. tekhn. nauk; KORNILOV, Ivan Ivanovich; MINTS, Rakhil' Samuilovna; SHOBIK, L.Ye., inzh., ved. red.; SOROKINA, T.M., tekhn. red.

[Laboratory press for hot compaction. Vacuum dilatometer for the study of metal powder sintering processes] Laboratornyi press dlia goriachego pressovaniia. Vakuumnyi dilatometr dlia izucheniia protsessa spekaniia metallicheskikh poroshkov. [By]I.I.Kornilov i R.S.Mints. Moskva, Filial Vses. inta nauchn. i tekhn.informatsii, 1958. 9 p. (Peredovoi nauchno-tekhnicheskii i proizvodstvennyi opyt. Tema 4. No.M-58-64/1) (MIRA 16:3)
(Powder metallurgy--Equipment and supplies)

TSUKERMAN, Samariy Aronovich

Poroshkovaya Metallurgiya Power Metallurgy Moskva, Izd-vo Akademii Nauk SSSR, 1958.

158 (1) P. Illus., Diagrs., Tables.
(Akademiya Nauk SSSR. Nauchno-Populyarnaya Seriya.)

"Literatura": P. 158-159

15(2)

AUTHOR: Tsukerman, S. A., Candidate of Technical Sciences SOV/30-59-9-8/39

TITLE: Products of Iron and Steel Power Metallurgy

PERIODICAL: Vestnik Akademii nauk SSSR, 1959, Nr 9, pp 42-46 (USSR)

ABSTRACT: Powder metallurgy permits mass production of parts of complex shape without or with only inconsiderable subsequent treatment. There is no, or at least a highly reduced loss of material. This method allows production from various components which is very difficult or even impossible by conventional methods. Powder metallurgy disposes of almost unlimited sources of raw material as e.g. the refuse of metallurgical and metal-processing works (scale, iron borings). The scheme of a technological process characteristic of powder metallurgy is the following: preparation - pressing - sintering - additional processing - control. Chemical regeneration of iron from oxides is regarded as the most economical production method of iron powders. A table shows the properties of ordinary ingot steel and iron materials produced by methods of powder metallurgy. Herefrom it may be seen that the properties of metal ceramics are equal to those of ingot steel and rolled

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iron. Metal ceramic steel has similar properties. Further, the various products are listed which may be successfully produced from metal ceramics. A figure shows parts of a tractor made by applying powder metallurgy. Finally, the material, machine work, and working hours are listed that are saved if powder metallurgy is used. The employment of this method is recommended to various branches of industry. There are 1 figure and 1 table.

TSUKERMAN, S.I.; VEKLENKO, V.D.

Semiautomatic equipment for feeding the molding mixture to the flasks. Lit. proizv. no.12:32 D '61. (MIRA 14:12)
(Molding (Founding))
(Feed mechanisms)

TSUKERMAN, S.A.; BAL'SHIN, M.Yu, otvetstvennyy redaktor; RAKOVSKIY, V.S., redaktor izdatel'stva; NEVRAYEVA, N.A., tekhnicheskiy redaktor

[Powder metallurgy and its industrial application] Poroshkovaia metallurgiia i ee promyshlennoe primenenie. Moskva, Izd-vo Akademii nauk SSSR, 1949 87 p. (MLRA 9:7)
(Powder metallurgy)

TSUKERMAN, S.I., inzh.

Obtaining malleable cast iron by mixing it with steel. Lit.proizv. no.3:47 Mr '59. (MIRA 12:4)
(Cast iron)

NOSKOV, B.A.; TSUKERMAN, S.I.

Metallurgical characteristics of remelting cast iron scrap.
Lit. proizv. no.2:3-5 F '65. (MIRA 18:6)

18(5) SOV/128-59-7-12/25

AUTHOR: Tsukerman, S.I., and Rozenberg, Yu.G., Engineers

TITLE: Coke-Gas Cupola Furnace

PERIODICAL: Liteynoye Proizvodstvo, 1959, Nr 7, pp 28-31 (USSR)

ABSTRACT: Experience gathered while working with coke-gas cupola furnaces (according to Liteynoye Proizvodstvo 1958, Nr 11) furnished practical data permitting some improvements and comparisons with the work of commonly used coke heated cupola furnaces. Already 5 coke-cupola furnaces work at the foundry of the Plant KhEMZ. (The Sovnarkhozes of Kharkov and Rostov have put such furnaces into operation). The test work had been concentrated on the complete combustion of the natural gas, on the operation of the gas burner, on the temperature of the cast iron and of the exhaust gases, on the chemical analysis and the mechanical properties of the cast iron, and on the slag of the cupola furnace. They had been done under the super-

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Coke-Gas Cupola Furnaces

vision of P.A. Moskov, Candidate of Technical Sciences An important factor of the melting process is the position of the gas burner at the cupola furnace (about in 700 to 800 mm distance). Four tables publish the results of the experiments made with both types of cupola furnaces. The results have confirmed the advantages of the coke-gas type furnace. Six month after putting into operation the new cupola furnace at the Plant VhEMZ already 700 tons of coke, 230 tons of limestone, 160 tons of refractory bricks, more than 30,000 cubic meters of oxygen, and 950 standard working hours had been saved. Semi-annual net savings: 250,000 rubles. There are 4 tables, 5 diagrams and 4 Soviet references

Card 2/2

TSUKERMAN, S.I.

Cupola furnace with a heated mixer. Lit. proizv. no.5:38-39 My '62. (MIRA 16:3)

(Cupola furnaces)

SOV/128-58-11-8/24

AUTHORS: Noskov, B.A., Rozenberg, Yu.G., Tsukerman, S.I., Den'gin, I.N.

TITLE: A Coke-Gas Cupola Furnace (Koksogazovaya vagranka)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 11, pp 14-15 (USSR)

ABSTRACT: The use of natural gas in cupola smelting leads to reduced coke expenses. Experiments carried out at the Khar'kovskiy elektromekhanicheskiy zavod (Khar'kov Electromechanical Plant) proved that the successful use of gas and coke depends on proper gas burning conditions, i.e. on the design of burners and their position in the cupola. It was stated that good results can be obtained by placing the burners above the tuyeres. Further investigations will be concentrated on determining the optimum dimensions of the distance between the burner axes and the tuyeres. The information includes a description of a cupola where normal conditions for gas burning and reduced coke expenses were obtained by reducing the number of tuyeres from 6 to 4. A new improved

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A Coke-Gas Cupola Furnace SOV/128-58-11-8-24

cupola design, now being installed, will make possible a further reduction in coke expense by a change in air distribution. There are 3 diagrams and 1 photo.

1. Blast furnaces---Equipment 2. Blast furnaces---Operation
3. Natural gas--Performance

Card 2/2

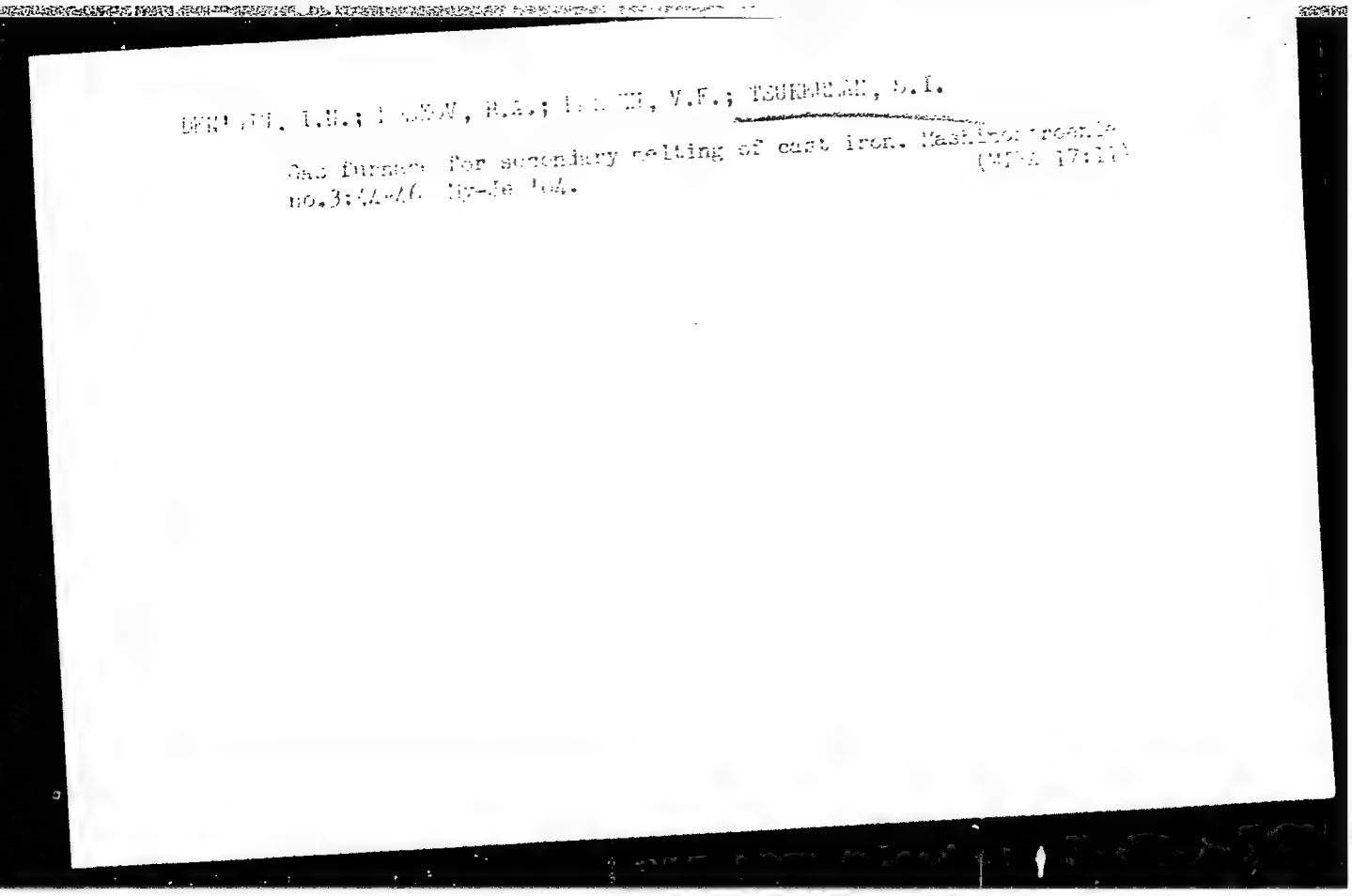
TSUKERMAN, S.I.; MELAMED, B.D.

Gas-fired titlting furnaces. Lit.proizv. no.2:40-41 F '62.
(MIRA 15:2)

(Foundries--Equipment and supplies)

GONTOVENKO, N.P.; ROZENBERG, Yu.G.; ZAMALIN, P.S.; TSUKERMAN, S.I.; GONTARENKO, I.F.; SYTNYANSKIY, V.D.; MARKMAN, L.L.

Smelting of pig iron in a coke gas cupola furnace. Prom. energ. 15 no.8:14-16 Ag '60. (MIRA 15:1)
(Cupola furnaces)
(Coke-oven gas)



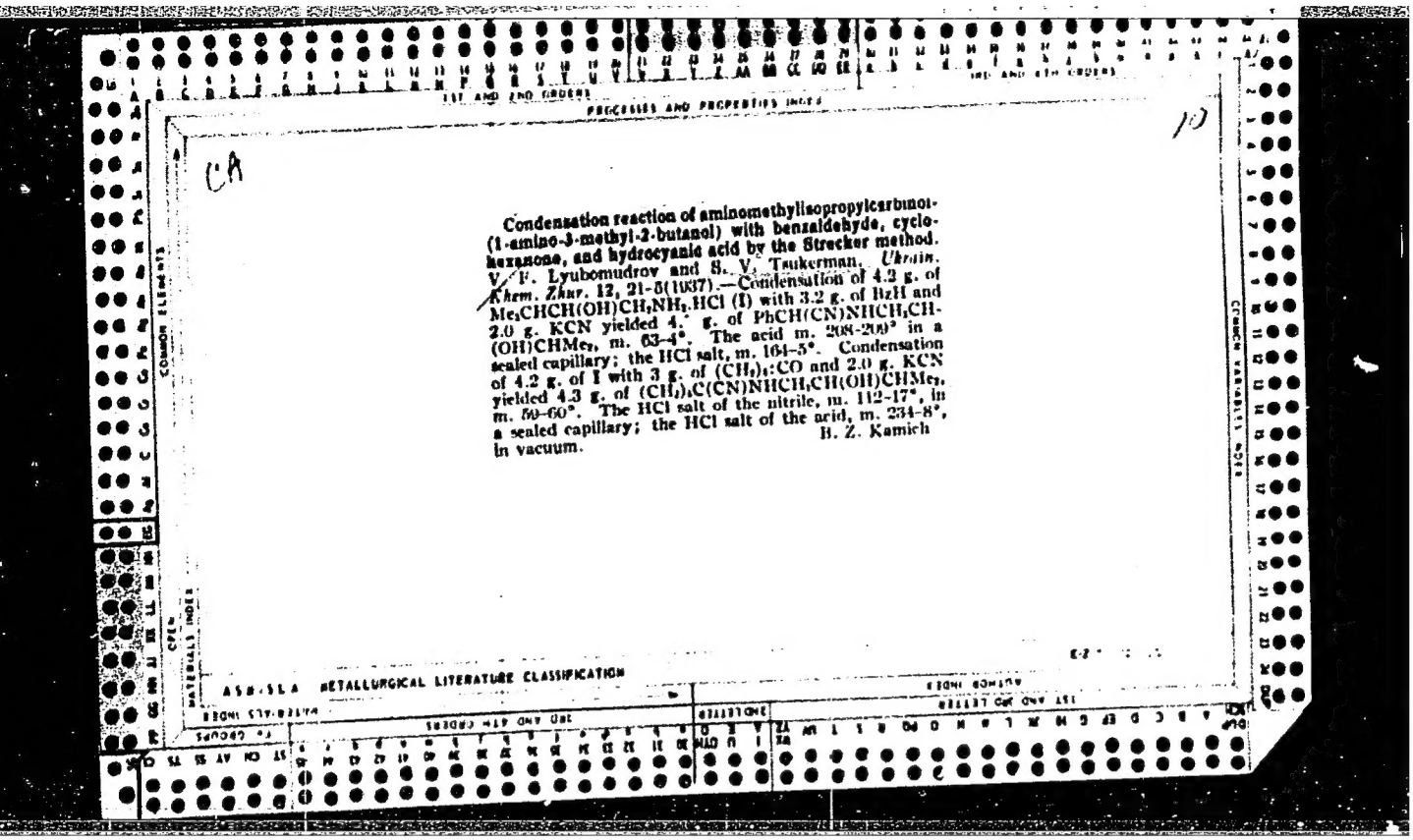
[illegible], I.M.; [illegible], N.A.; [illegible], V.F.; TSUKERMAN, S.I.

Gas furnace for secondary melting of cast iron. Mashinostroenie (MIRA 17:11)
no.3:42-46 My-Je '64.

TSUKERMAN, S.T., prof.

New instrument for measuring speeds of air and gas flow. Izv. vys.ucheb.zav.; prib. no.3:73-78 '58. (MIRA 12:2)

1. Leningradskiy institut tochnoy mekhaniki i optiki.
(Flowmeters)



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Condensation reaction of aminomethylisopropylcarbinol-(1-amino-3-methyl-2-butanol) with benzaldehyde, cyclohexanone, and hydrocyanic acid by the Strecker method. V. F. Lyubomudrov and S. V. Tsukerman. *Ukrain. Khem. Zhur.* 12, 21-5(1937).—Condensation of 4.2 g. of $Me_2CHCH(OH)CH_2NH_2.HCl$ (I) with 3.2 g. of BzH and 2.0 g. KCN yielded 4.[illegible] g. of $PhCH(CN)NHCH_2CH(OH)CHMe_2$, m. 63–4°. The acid m. 208–209° in a sealed capillary; the HCl salt, m. 164–5°. Condensation of 4.2 g. of I with 3 g. of $(CH_2)_5CO$ and 2.0 g. KCN yielded 4.3 g. of $(CH_2)_5C(CN)NHCH_2CH(OH)CHMe_2$, m. 59–60°. The HCl salt of the nitrile, m. 112–17°, in a sealed capillary; the HCl salt of the acid, m. 234–8°, in vacuum.

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Condensation of β-aminoethyl mercaptan with aldehydes. S. V. Tsukerman, Ukrain. Khim. Zhur., 19, 160–4(1953); Referat. Zhur., Khim., 1954, No. 25301.—β-Aminoethyl mercaptan-HCl (I) was condensed with isovaleraldehyde (II), anisaldehyde (III), salicylaldehyde (IV), o-, m-, p-nitrobenzaldehydes (V, VI, and VII), o-, m-, and p-chlorobenzaldehyde (VIII, IX, and X), and furfurol (XI). The condensation of I with aromatic aldehydes proceeds appreciably faster than it does with aliphatic aldehydes. Hg(SCH$_2$CH$_2$NH$_2$)$_2$, m. 181-2°, was obtained by the addn. of 3 moles $HgCl_2$ to 2 moles of β-phthalimidoethyl mercaptan after sapong. with concd. HCl at 190–200°; 25 g. product was suspended in 400 ml. of hot H_2O and satd. with H_2S to complete pptn. of HgS, the mixt. filtered, the filtrate concd. to 50 ml., and the ppt. dried *in vacuo* to give I, transparent crystals, m. 69–71°. To 1.5 g. I in 15 ml. H_2O was added 6 ml. of II in 15–20 ml. EtOH, the soln kept 2 weeks, then evapd. to a thick sirup, to give 24% 2-isobutylthiazolidine-HCl, m. 192–3°. To 2 g. of I in 15 ml. of H_2O was added 4 ml. of III in 15 ml. of EtOH; after 3 days the mixt. yielded 48% 2-(*p*-methoxyphenyl)thiazolidine, m. 92–3° (HCl salt, m. 145–6°). I (2 g.), 4 ml. of III, and 15 ml. alc. kept 1 day yielded the di-β-aminoethyl mercaptal-2HCl of III (67%), m. 192°; free base, oily, sol. in alc. and insol. in H_2O. To 3 g. I in 15 ml. H_2O was added 15 ml. alc. and 6 ml. IV. After 3 days yellow crystals of 2-(*o*-hydroxyphenyl)thiazolidine (61%), m. 75–8°, sepd. I (2 g.), 4 g. IV, and 15 ml. alc., kept 3 days and ether added, yielded an oily substance which on treatment with NH_4 gave 65% di-β-aminoethyl mercaptal of IV, m. 58°. To 1

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g. I in 10 ml. EtOH was added 1 g. V in 10 ml. of EtOH. After 2 days there sepd. crystals of 40% 2-(o-nitrophenyl)-thiazolidine-HCl, m. 176.8° (decompn.), hydrolyzed in boiling H_2O to V. Similarly from I and VI was obtained 57% 2-(m-nitrophenyl)thiazolidine, m. 195° (decompn.), decomp. when heated with H_2O. From I and VII was obtained 38% 2-(p-nitrophenyl)thiazolidine, m. 198–200°, decomp. in boiling H_2O to VII. To 1 g. I in 6 ml. EtOH was added 1 g. VIII, after 3 days the mixt. yielded colorless crystals of 2-(o-chlorophenyl)thiazolidine-HCl (72%), m. 170.5–1.5°. Similarly from I and IX was obtained 42% 2-(m-chlorophenyl)thiazolidine-HCl, m. 152.5–53°, colorless crystals; free base, m. 84–5°. To 1 g. I in 10 ml. EtOH was added 1 g. X; the mixt. kept 5 days at approx. 20° yielded 53% 2-(p-chlorophenyl)thiazolidine-HCl, m. 157.8° (free base, m. 102–3°). From 1 g. I in 10 ml. EtOH and 1 ml. of XI after 2 hrs. was obtained 71% di-β-aminoethyl mercaptal 2HCl of XI, m. 174.5° sol. in H_2O, and in hot alc.

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Condensation of β-aminoethyl mercaptan with ketones. S. V. Tsukerman. *Ukrain. Khim. Zhur.* 19, 523–8(1953); *Referat. Zhur., Khim.* 1954, No. 19835.—β-Aminoethyl mercaptan (I) was condensed with Me_2CO (II), MeCOEt (III), EtCOPr (IV), cyclohexanone (V), and PhCOMe (VI) by prolonged heating in the presence of a large excess of ketone thereby producing thiazolidines. The rate of reaction decreased as the mol. wt. of the ketones increased; with Ph_2CO no reaction took place. I and II (in stoichiometric ratios (in glacial AcOH and with dry HCl formed bis(β-aminoethyl mercaptol of Me_2CO (VII). The 2,2-disubstituted thiazolidines obtained in these reactions hydrolyzed at rates varying with the nature of the substituent. The time required for a positive reaction, indicative of an SH group in 0.05% aq. solns. at 20° was: thiazolidine 2.5–3 hrs., 2,2-dimethylthiazolidine (VIII) 10–15 min., 2-methyl-2-ethylthiazolidine (IX) 20 min., 2-ethyl-2-propylthiazolidine (X) 1 hr., 15 min., spirocyclohexane-2,2'-thiazolidine (XI) 40 min., and 2-methyl-2-phenylthiazolidine (XII) 5–10 min. I hydrochloride (0.9 g.), 9 ml. MeOH, and 90 ml. II boiled 4–5 hrs., 45 ml. of abs. ether added, and the mixt. cooled to below 0° gave VIII hydrochloride, m. 164–5°, yield 70%; the free base is an oily substance of unpleasant odor. I hydrochloride (0.9 g.) and 0.24 g. II in 5 ml. of glacial AcOH was satd. with gaseous HCl. After several hrs. 25 ml. of glacial AcOH and 35 ml. of abs. ether were added to yield VII, m. 195–6°, yield 76%. A mixt. of 0.6 g. of I, 6 ml. MeOH, and 60 ml. of III was kept for 5 days, and then excess III was removed *in vacuo* (30–40 mm.) to form IX hydrochloride, m. 99–100°, yield 70%. By procedures similar to the production of VIII were obtained X hydrochloride (boiling 12 hrs.), m. 126–7°, yield 77%; XI hydrochloride (boiling 4 hrs.), m. 164–5°, yield 60%; and XII hydrochloride (boiling 8–12 hrs.), m. 159–60°, yield 32%.

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